EATON | Powerware

Powerware® 9125 Two-in-One PowerPass® Distribution Module User's Guide

For use with Powerware 9125 Two-in-One
5000/6000 VA UPS Models

Class A EMC Statements

FCC Part 15

NOTE This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

ICES-003

This Class A Interference Causing Equipment meets all requirements of the Canadian Interference Causing Equipment Regulations ICES-003.

Cet appareil numérique de la classe A respecte toutes les exigences du Reglement sur le matériel brouilleur du Canada.

EN 50091-2

Some configurations are classified under EN 50091-2 as "Class-A UPS for Unrestricted Sales Distribution." For these configurations, the following applies:

WARNING This is a Class A-UPS Product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take additional measures.

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Greenlee is a registered trademark of Greenlee Textron.

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Requesting a Declaration of Conformity

Units that are labeled with a CE mark comply with the following harmonized standards and EU directives:

- Harmonized Standards: EN 50091-1-1 and EN 50091-2; IEC 60950 Third Edition
- EU Directives: 73/23/EEC, Council Directive on equipment designed for use within certain voltage limits
  93/68/EEC, Amending Directive 73/23/EEC
  89/336/EEC, Council Directive relating to electromagnetic compatibility
  92/31/EEC, Amending Directive 89/336/EEC relating to EMC

The EC Declaration of Conformity is available upon request for products with a CE mark. For copies of the EC Declaration of Conformity, contact:

Eaton Power Quality Oy
Koskelontie 13
FIN-02920 Espoo
Finland
Phone: +358-9-452 661
Fax: +358-9-452 665 68

Special Symbols

The following are examples of symbols used on the UPS or accessories to alert you to important information:

RISK OF ELECTRIC SHOCK - Indicates that a risk of electric shock is present and the associated warning should be observed.

CAUTION: REFER TO OPERATOR'S MANUAL - Refer to your operator's manual for additional information, such as important operating and maintenance instructions.

This symbol indicates that you should not discard the UPS or the UPS batteries in the trash. This product contains sealed, lead-acid batteries and must be disposed of properly. For more information, contact your local recycling/reuse or hazardous waste center.

This symbol indicates that you should not discard waste electrical or electronic equipment (WEEE) in the trash. For proper disposal, contact your local recycling/reuse or hazardous waste center.

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Chapter 1 Introduction

The PowerPass® Distribution Module (PDM) is designed to operate with a 5000/6000 VA Powerware® 9125 uninterruptible power system (UPS). The PDM allows you to:

- Replace or upgrade the UPS without losing power to the protected equipment (see "Using Maintenance Bypass" on page 37).
- Provide surge protection if the UPS is not present.
- Provide extra surge protection when the UPS is present.

Safety Warnings

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

This manual contains important instructions that you should follow during the installation of the UPS and PDM. Please read all instructions before operating the equipment and save this manual for future reference.

DANGER

This UPS contains **LETHAL VOLTAGES**. All repairs and service should be performed by **AUTHORIZED SERVICE PERSONNEL ONLY**. There are **NO USER SERVICEABLE PARTS** inside the UPS.

CAUTION

- To reduce the risk of fire or electric shock, install this UPS in a temperature and humidity controlled, indoor environment, free of conductive contaminants. Ambient temperature must not exceed 40°C (104°F). Do not operate near water or excessive humidity (95% maximum).
- For PDM models with hardwired outputs, overcurrent protection for the output AC circuit(s) is to be provided by others.
- For PDM models with hardwired outputs, suitably rated disconnect switches for the output AC circuit(s) are to be provided by others.

Sikkerhedsanvisninger

VIGTIGE SIKKERHEDSANVISNINGER
GEM DISSE ANVISNINGER
DENNE BRUGERVEJLEDNING INDEHOLDER VIGTIGE SIKKERHEDSANVISNINGER

FARE

Denne UPS indeholder LIVSFARLIG HØJSPÆNDING. Alle reparationer og vedligeholdelse bør kun udføres af en AUTORISERET SERVICETEKNIKER. Ingen af UPS'ens indvendige dele kan repareres af brugeren.

ADVARSEL

- Installér denne UPS i et temperatur- og fugtighedskontrolleret indendørsmiljø, frit for ledende forureningsstoffer for at formindske risikoen for brand og elektrisk stød. Rumtemperaturen må ikke overstige 40°C. UPS'en bør ikke betjenes nær vand eller høj fugtighed (maksimalt 95%).
- For PDM systemer med hårdledningsudgange, skal overstrømsbeskyttelse for vekslestrømmens udgangskredsløb forsynes af andre.
- For PDM systemer med hårdledningsudgange, skal egnede, nominelle afbryderkontakter for vekslestrømmens udgangskredsløb forsynes af andre.

Belangrijke Veiligheidsinstructies

BELANGRIJKE VEILIGHEIDSINSTRUCTIES
BEWAAR DEZE INSTRUCTIES
DEZE HANDLEIDING BEVAT BELANGRIJKE VEILIGHEIDSINSTRUCTIES

GEVAAR

Deze UPS bevat LEVENSGEVAARLIJKE ELEKTRISCHE SPANNING. Alle reparaties en onderhoud dienen UITSLUITEND DOOR ERKEND SERVICEPERSONEEL te worden uitgevoerd. Er bevinden zich GEEN ONDERDELEN in de UPS die DOOR DE GEBRUIKER kunnen worden GEREPAREERD.

OPGELET

- Teneinde de kans op brand of elektrische schok te verminderen dient deze UPS in een gebouw met temperatuur- en vochtigheidregeling te worden geïnstalleerd, waar geen geleidende verontreinigingen aanwezig zijn. De omgevingstemperatuur mag 40°C niet overschrijden. Niet gebruiken in de buurt van water of bij zeer hoge vochtigheid (max. 95%).
- Voor PDM systemen met vast-bedrade uitgangen, moet de overstroombeveiliging voor wisselstroom uitvoercircuit(s) door anderen worden geleverd.
- Voor PDM systemen met vast-bedrade uitgangen, moeten de juiste hoofdschakelaars voor wisselstroom uitvoercircuit(s) door anderen worden geleverd.

Tarkeita Turvaohjeita

TÄRKEITÄ TURVAOHJEITA - SUOMI
SÄILYTÄ NÄMÄ OHJEET
TÄMÄ OPAS SISÄLTÄÄ TÄRKEITÄ TURVAOHJEITA

VAARA

Tämä UPS sisältää HENGENVAARALLISIA JÄNNITTEITÄ. Kaikki korjaukset ja huollot on jätettävä VAIN VALTUUTETUN HUOLTOHENKILÖN TOIMEKSI. UPS ei sisällä MITÄÄN KÄYTTÄJÄN HUOLLETTAVIA OSIA.

VARO

- Vähentääksesi tulipalon ja sähköiskun vaaraa asenna tämä UPS sisätiloihin, joissa lämpötila ja kosteus on säädettävissä ja joissa ei ole virtaa johtavia epäpuhtauksia. Ympäristön lämpötila ei saa ylittää 40 °C. Älä käytä lähellä vettä ja vältä kosteita tiloja (95 % maksimi).
- PDM-järjestelmissä kiintealla asennuksella: kuormana olevien laitteiden ylivirtasuojaus ja erotuskytkimet tulee toteuttaa kuormapiireissa.

Consignes de sécurité

CONSIGNES DE SÉCURITÉ IMPORTANTES
CONSERVER CES INSTRUCTIONS
CE MANUEL CONTIENT DES CONSIGNES DE SÉCURITÉ IMPORTANTES

DANGER!

Cet onduleur contient des TENSIONS MORTELLES. Toute opération d'entretien et de réparation doit être EXCLUSIVEMENT CONFIÉE A UN PERSONNEL QUALIFIÉ AGRÉÉ. AUCUNE PIÈCE RÉPARABLE PAR L'UTILISATEUR ne se trouve dans l'onduleur.

ATTENTION!

- Pour réduire les risques d'incendie et de décharge électrique, installer l'onduleur uniquement à l'intérieur, dans un lieu dépourvu de matériaux conducteurs, où la température et l'humidité ambiantes sont contrôlées. La température ambiante ne doit pas dépasser 40 °C. Ne pas utiliser à proximité d'eau ou dans une atmosphère excessivement humide (95 % maximum).
- Pour les models PDM ayant des sorties câblées, la protection contre une surintensité pour le(s) circuit(s) de sortie de courant alternatif doit être fournie par un autre fournisseur.
- Pour les models PDM ayant des sorties câblées, les interrupteurs de déconnexion convenables pour le(s) circuit(s) de sortie de courant alternatif doivent être fournie par un autre fournisseur.

Sicherheitswarnungen

WICHTIGE SICHERHEITSANWEISUNGEN AUFBEWAHREN. DIESES HANDBUCH ENTHÄLT WICHTIGE SICHERHEITSANWEISUNGEN.

WARNUNG

Die USV führt lebensgefährliche Spannungen. Alle Reparatur- und Wartungsarbeiten sollten nur von Kundendienstfachleuten durchgeführt werden. Die USV enthält keine vom Benutzer zu wartenden Komponente.

VORSICHT!

- Um die Brand- oder Elektroschockgefahr zu verringern, diese USV nur in Gebäuden mit kontrollierter Temperatur und Luftfeuchtigkeit installieren, in denen keine leitenden Schmutzstoffen vorhanden sind. Die Umgebungstemperatur darf 40°C nicht übersteigen. Die USV nicht in der Nähe von Wasser oder in extrem hoher Luftfeuchtigkeit (max. 95 %) betreiben.
- Für PDM-Systeme mit festverdrahteten Eingängen muß der Überstromschutz für die Ausgangswechselstromkreise anderweitig bereitgestellt werden.
- Für PDM-Systeme mit festverdrahteten Ausgängen müssen Trennschalter für die Ausgangswechselstromkreise mit passendem Nennwert anderweitig bereitgestellt werden.

Avvisi di sicurezza

IMPORTANTI ISTRUZIONI DI SICUREZZA
CONSERVARE QUESTE ISTRUZIONI
QUESTO MANUALE CONTIENE IMPORTANTI ISTRUZIONI DI SICUREZZA

PERICOLO

la TENSIONE contenuta in questo gruppo statico di continuità è LETALE. Tutte le operazioni di riparazione e di manutenzione devono essere effettuate ESCLUSIVAMENTE DA PERSONALE TECNICO AUTORIZZATO. All'interno del gruppo statico di continuità NON vi sono PARTI RIPARABILI DALL'UTENTE.

ATTENZIONE

- Per ridurre il rischio di incendio o di scossa elettrica, installare il gruppo statico di continuità in un ambiente interno a temperatura ed umidità controllata, privo di agenti contaminanti conduttivi. La temperatura ambiente non deve superare i 40°C. Non utilizzare l'unità in prossimità di acqua o in presenza di umidità eccessiva (95% max).
- Nei sistemi PDM provvisti di uscite cablate, i dispositivi di protezione da sovracorrente per il/i circuito/i a corrente alternata in uscita devono essere forniti da terzi.
- Nei sistemi PDM provvisti di uscite cablate, i sezionatori di corrente nominale adeguata per il/i circuito/i a corrente alternata in uscita devono essere forniti da terzi.

Viktig Sikkerhetsinformasion

FARLIG

Denne UPS'en inneholder LIVSFARLIGE SPENNINGER. All reparasjon og service må kun utføres av AUTORISERT SERVICEPERSONALE. BRUKERE KAN IKKE UTFØRE SERVICE PÅ NOEN AV DELENE i UPS'en.

FORSIKTIG

- For å redusere fare for brann eller elektriske støt, bør denne UPS'en installeres i et innendørs miljø med kontrollert temperatur og luftfuktighet som er fritt for ledende, forurensende stoffer. Romtemperaturen må ikke overskride 40°C. Den må ikke brukes i nærheten av vann eller ved meget høy luftfuktighet (95% maks.).
- For PDM systemer med fastkoplete uttak, må overstrømvern for vekselstrømuttak(ene) stilles til rådighet av andre.
- For PDM systemer med fastkoplete uttak, må passende utkoplingsbrytere for vekselstrømuttak(ene) stilles til rådighet av andre.

Regulamentos de Segurança

INSTRUÇÕES DE SEGURANÇA IMPORTANTES
GUARDE ESTAS INSTRUÇÕES
ESTE MANUAL CONTÉM INSTRUÇÕES DE SEGURANÇA IMPORTANTES

CUIDADO

A UPS contém VOLTAGEM MORTAL. Todos os reparos e assistência técnica devem ser executados SOMENTE POR PESSOAL DA ASSISTÊNCIA TÉCNICA AUTORIZADO. Não há nenhuma PEÇA QUE POSSA SER REPARADA PELO USUÁRIO dentro da UPS.

PERIGO

- Para reduzir o risco de incêndios ou choques elétricos, instale a UPS em ambiente interno com temperatura e umidade controladas e livres de contaminadores condutíveis. A temperatura ambiente não deve exceder 40°C. Não opere próximo a água ou em umidade excessiva (máx: 95%).
- Para sistemas PDM com saídas conectadas, a proteção de sobrecarga para circuitos de saída de corrente alternada deve ser fornecida por outros.
- Para sistemas PDM com saídas conectadas, interruptores de desconexão devidamente qualificados para circuitos de saída de corrente alternada devem ser fornecidos por outros.

Предупреждения по мерам безопасности

ВАЖНЫЕ УКАЗАНИЯ ПО МЕРАМ БЕЗОПАСНОСТИ СОХРАНИТЕ ЭТИ УКАЗАНИЯ ДАННОЕ РУКОВОДСТВО СОДЕРЖИТ ВАЖНЫЕ УКАЗАНИЯ ПО МЕРАМ БЕЗОПАСНОСТИ

ОПАСНО

В данном ИБП имеются СМЕРТЕЛЬНО ОПАСНЫЕ НАПРЯЖЕНИЯ. Все работы по ремонту и обслуживанию должны выполняться ТОЛЬКО УПОЛНОМОЧЕННЫМ ОБСЛУЖИВАЮЩИМ ПЕРСОНАЛОМ. Внутри ИБП нет узлов, ОБСЛУЖИВАЕМЫХ ПОЛЬЗОВАТЕЛЕМ.

ОСТОРОЖНО

- Для снижения опасности пожара или поражения электрическим током устанавливайте ИБП в закрытом помещении с контролируемыми температурой и влажностью, в котором отсутствуют проводящие загрязняющие вещества. Температура окружающего воздуха не должна превышать 40°C. Не эксплуатируйте устройство около воды или в местах с повышенной влажностью (макс. 95%).

Advertencias de Seguridad

INSTRUCCIONES DE SEGURIDAD IMPORTANTES
GUARDE ESTAS INSTRUCCIONES
ESTE MANUAL CONTIENE INSTRUCCIONES DE SEGURIDAD IMPORTANTES

PELIGRO

Este SIE contiene VOLTAJES MORTALES. Todas las reparaciones y el servicio técnico deben ser efectuados SOLAMENTE POR PERSONAL DE SERVICIO TÉCNICO AUTORIZADO. No hay NINGUNA PARTE QUE EL USUARIO PUEDA REPARAR dentro del SIE.

PRECAUCIÓN

- Para reducir el riesgo de incendio o de choque eléctrico, instale este SIE en un lugar cubierto, con temperatura y humedad controladas, libre de contaminantes conductores. La temperatura ambiente no debe exceder los 40°C. No trabaje cerca del agua o con humedad excesiva (95% máximo).
- Para los sistemas PDM con salidas cableadas permanentemente, la protección contra exceso de corriente para el/los circuito(s) de CA de salida será suministrada por terceros.
- Para los sistemas PDM con salidas cableadas permanentemente, los interruptores de desconexión debidamente clasificados para el/los circuito(s) de CA de salida serán suministrados por terceros.

Säkerhetsföreskrifter

VIKTIGA SÄKERHETSFÖRESKRIFTER
SPARA DESSA FÖRESKRIFTER
DENNA BRUKSANVISNING INNEHÅLLER VIKTIGA SÄKERHETSFÖRESKRIFTER

FARA

Denna UPS-enhet innehåller LIVSFARLIG SPÄNNING. ENDAST AUKTORISERAD SERVICEPERSONAL får utföra reparationer eller service. Det finns inga delar som ANVÄNDAREN KAN UTFÖRA SERVICE PÅ inuti UPS-enheten.

VIKTIGT

- Minska risken för brand eller elektriska stötar genom att installera denna UPS-enhet inomhus, där temperatur och luftfuktighet är kontrollerade och där inga ledande föroreningar förekommer. Omgivande temperatur får ej överstiga 40°C. Använd inte utrustningen nära vatten eller vid hög luftfuktighet (max 95 %).
- Överströmsskydd för de utgående växelströmskretsarna ska tillhandahållas av andra för PDM-system med fasta utgångar.
- Bortkopplingsswitchar med passande dimensionering för de utgående växelströmskretsarna ska tillhandahållas av andra för PDM-system med fasta utgångar.

Chapter 2 Installation

This section explains:

- Equipment inspection
- UPS setup
- Extended Battery Module (EBM) installation
- PowerPass Distribution Module and UPS installation
- Remote emergency power-off (REPO) installation
- PDM rear panels

Inspecting the Equipment

If any equipment has been damaged during shipment, keep the shipping cartons and packing materials for the carrier or place of purchase and file a claim for shipping damage. If you discover damage after acceptance, file a claim for concealed damage.

To file a claim for shipping damage or concealed damage: 1) File with the carrier within 15 days of receipt of the equipment; 2) Send a copy of the damage claim within 15 days to your service representative.

NOTE *Check the battery recharge date on the shipping carton label. If the date has expired and the batteries were never recharged, do not use the UPS. Contact your service representative.*

NOTE *Inspect the battery trays for any loose connections. If any damage occurred during shipment, file a shipping claim as stated above.*

UPS Setup

The Powerware 9125 UPS is designed for flexible configurations and can be installed in a rack or as a standalone cabinet.

If the UPS is already installed and operating, shut down the UPS before installing the PDM. See the following section, "UPS Shutdown."

For new UPS installations, continue to "Installing the UPS Internal Batteries" on page 14 to begin the UPS setup.

UPS Shutdown

If the UPS is already installed and operating, use the following procedure to shut down the UPS:

1. Prepare your equipment for shutdown.
2. Press and hold the Off ⏻ button for approximately three seconds. The ~ indicator begins to flash. The UPS switches to Standby mode (if utility power is available) and removes power from your equipment.
3. Unplug or remove utility power from the UPS; the UPS shuts down in five seconds. The bar graph and battery indicators flash briefly prior to shutdown.
4. Disconnect the power cord from the UPS input connector.
5. Disconnect the protected equipment power cord from the UPS.
6. Continue to "Plug-Receptacle PDM Installation" on page 19 or "Hardwired PDM Installation" on page 25.

Installing the UPS Internal Batteries

CAUTION

The UPS battery trays are heavy (28.1 kg/62 lb). A minimum of two people are required to lift the battery trays into the UPS chassis.

NOTE *For new rack-mounted installations, follow the instructions with the rail kit before installing the internal batteries.*

To install the battery trays into the UPS chassis:

1. Verify that the battery circuit breaker on the UPS rear panel is in the OFF position (see Figure 6 on page 18).
2. Slide the battery trays into the chassis (see Figure 1).

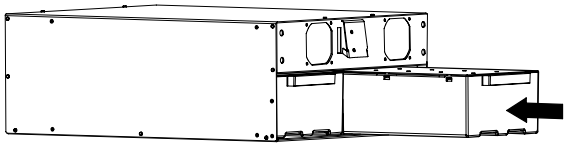


Figure 1. Installing the Battery Trays

3. Secure the battery trays to the chassis with the battery retaining bracket and screws provided in the accessory kit (see Figure 2).

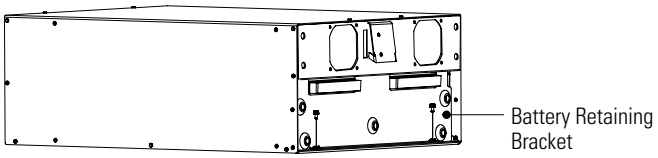


Figure 2. Securing the Battery Trays

4. Install the UPS front covers (provided in the accessory kit). See Figure 3.

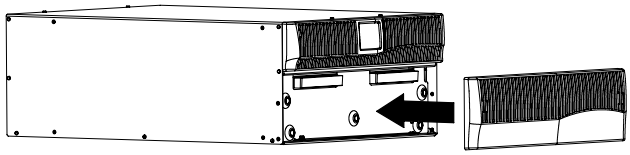


Figure 3. Installing the UPS Front Covers

5. If you are installing the UPS in a tower configuration, continue to the following section, "Tower Setup."

   If the UPS is in a rack and you are installing an optional EBM, continue to "EBM Installation" on page 18; otherwise, continue to "Plug-Receptacle PDM Installation" on page 19 or "Hardwired PDM Installation" on page 25.

Tower Setup

The UPS and any optional cabinets must be stabilized with joining brackets.

1. Carefully position the cabinets upright (see Figure 4).

NOTE *The PDM must be installed to the right of the UPS (between the UPS and EBM) as shown in Figure 4.*

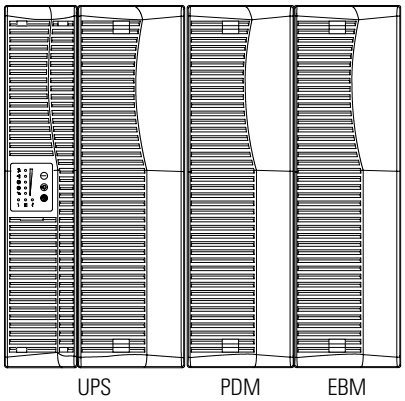


Figure 4. Tower PDM Configuration

2. Align each joining bracket with the adjacent cabinet screw holes and secure with the supplied screws (see Figure 5).

3. If installing additional cabinets, repeat Step 2 for each cabinet.

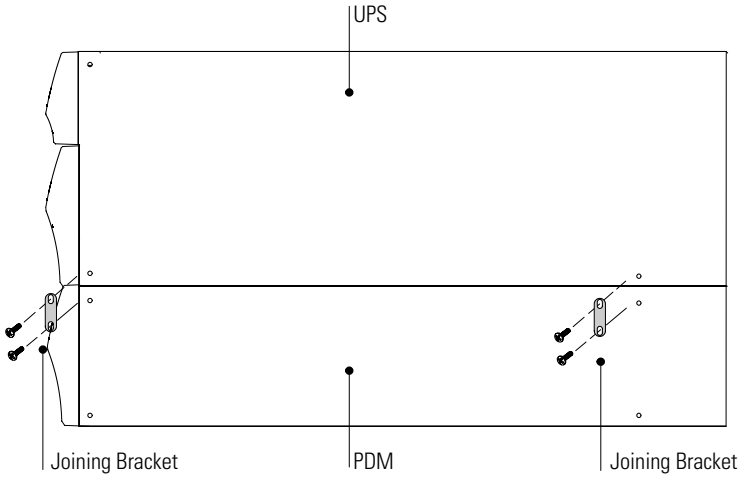


Figure 5. Installing the Joining Brackets (Top View)

4. If you are installing an optional EBM, continue to the following section, "EBM Installation;" otherwise, continue to "Plug-Receptacle PDM Installation" on page 19 or "Hardwired PDM Installation" on page 25.

EBM Installation

CAUTION

A small amount of arcing may occur when connecting an EBM to the UPS. This is normal and will not harm personnel. Insert the EBM cable into the UPS battery connector quickly and firmly.

To install the optional EBM(s):

1. Verify that all battery circuit breakers are in the OFF (O) position (see Figure 6).
2. Plug the EBM cable of the first EBM into the UPS battery connector.

   If additional EBMs are to be installed, plug the EBM cable of the second cabinet into the battery connector on the first EBM. Repeat for each additional EBM. Up to four EBMs may be connected to the UPS.
3. Continue to the following section, "Plug-Receptacle PDM Installation," or "Hardwired PDM Installation" on page 25.

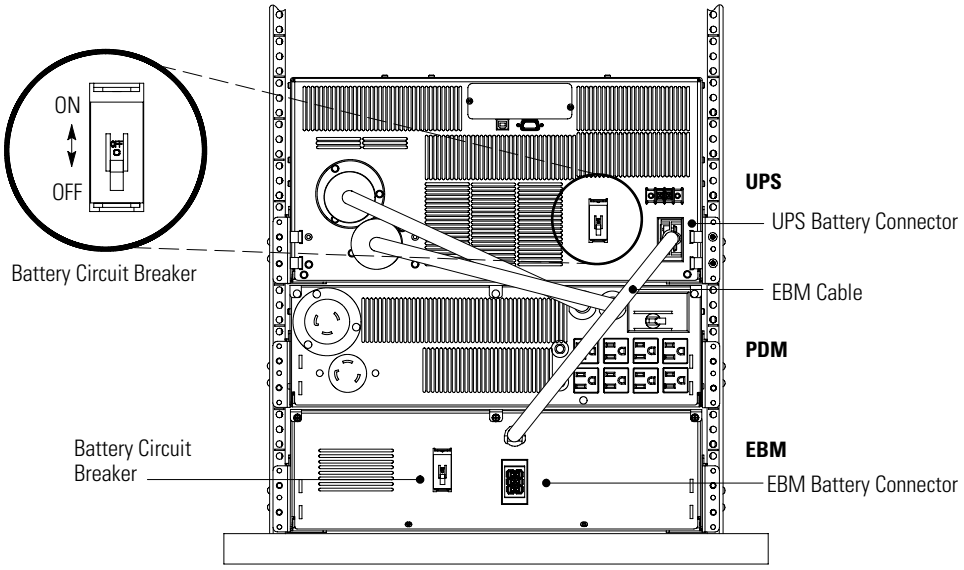


Figure 6. Typical UPS Installation with EBM and PDM

Plug-Receptacle PDM Installation

NOTE *Do not make unauthorized changes to the UPS or PDM; otherwise, damage may occur to your equipment and void your warranty.*

To install the PDM:

1. If you are installing power management software, connect your computer to the USB port or UPS communication port. For the communication port, use only the serial cable supplied in the accessory kit.

2. Verify that the PDM output circuit breaker is in the OFF position (see Figure 8 on page 21).

3. Verify that the bypass switch on the PDM is in the NORMAL position (see Figure 7).

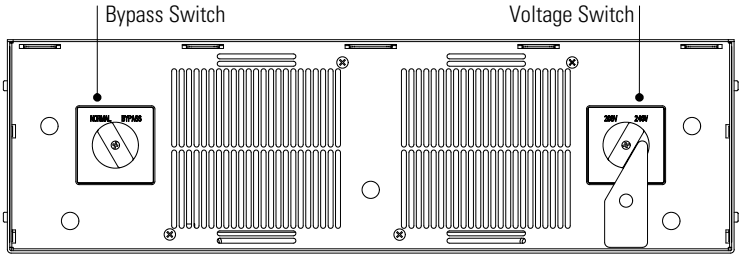


Figure 7. PDM (with Front Cover Removed)

4. **Changing the PDM output voltage.** When the PDM voltage switch is set to the 240V position (the default), the output voltage is 240/120V. When set to the 208V position, the output voltage is 208/120V. See Table 1 for a complete list of PDM input/output voltage settings. Figure 7 shows the voltage switch.

NOTE *In most applications, the voltage switch does NOT need changing.*

To change the switch position, remove the bracket screw and turn the switch. Flip the bracket around to fit the new position and reinstall.

Table 1. Plug-Receptacle PDM Input/Output Voltage Settings

Input Voltage (from UPS)	PPDM L6-30 and PPDM L6-20 Models Output Voltage	
	208V Switch Position (HV/LV)	Default 240V Switch Position (HV/LV)
208	208/120	208/104
220	220/126	220/110
230	230/131	230/115
240	240/136	240/120

Input Voltage (from UPS)	PPDM L5-30 Models Output Voltage	
	208V Switch Position	Default 240V Switch Position
208	120	104
220	126	110
230	131	115
240	136	120

Input Voltage (from UPS)	PPDM L14-30 Models Output Voltage	
	208V Switch Position (L14-30R/5-15R)	Default 240V Switch Position (L14-30R/5-15R)
208	240/120	208/104
220	252/126	220/110
230	262/131	230/115
240	272/136	240/120

Input Voltage (from UPS)	PPDM L6-30&L14-30 Models Output Voltage	
	208V Switch Position (L6-30R/L14-30R/5-15R)	Default 240V Switch Position (L6-30R/L14-30R/5-15R)
208	208/240/120	208/208/104
220	220/252/126	220/220/110
230	230/262/131	230/230/115
240	240/272/136	240/240/120

5. **Neutral-to-Ground Bonding.** The PDM has a neutral-to-ground (N-G or neutral-to-earth) bonding screw as required under safety regulations issued by various regulatory agencies (see Figure 8). If the neutral-to-ground connection is not needed, remove the screw to remove the bond between neutral and ground.

6. Plug the input and output cords of the PDM into the input and output power connectors on the UPS rear panel (see Figure 8).

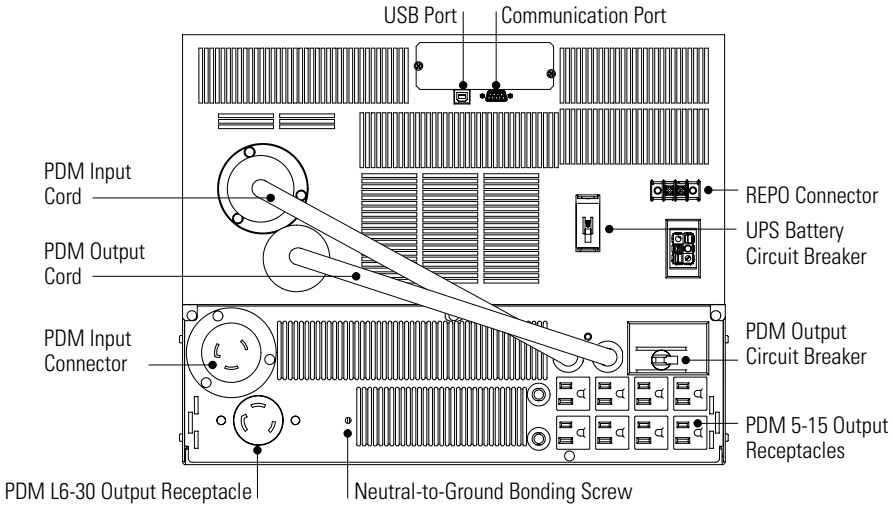


Figure 8. UPS and Plug-Receptacle PDM Installation (L6-30 Model Shown)

7. Remove the breaker tie from all battery circuit breakers.

8. Switch all battery circuit breakers to the ON (|) position.

9. If an emergency power-off (disconnect) switch is required by local codes, see "Remote Emergency Power-off Installation" on page 23 to install the REPO switch before powering on the UPS.

10. Plug the detachable UPS power cord into the input connector on the PDM rear panel.

11. Plug the UPS power cord into an L6-30R power outlet.

    The ~ indicator flashes, indicating the UPS is in Standby mode with the equipment offline.

12. Press the On | button on the UPS front panel.

The ~ indicator illuminates solid and the bar graph indicators display the percentage of load being applied to the UPS.

13. Confirm the UPS output voltage through the front panel and verify that it matches the PDM output voltage (see page 35).

CAUTION

Failure to match the UPS output voltage may result in a hazardous condition, including damage to the UPS or to the load.

14. Plug the equipment to be protected into the PDM output receptacle(s).

NOTE *DO NOT protect laser printers with the UPS because of the exceptionally high power requirements of the heating elements.*

15. Switch the PDM output circuit breaker to the ON (|) position.

NOTE *The PDM output circuit breaker (disconnect switch) disconnects power to all of the output receptacles on the PDM rear panel, but does NOT shut off power to the UPS (opening the upstream protection would be required).*

16. Install the PDM front cover (shipped separately).

17. If you installed a REPO switch, test the REPO function:

Activate the external REPO switch.

De-activate the external REPO switch and restart the UPS.

NOTE *The batteries charge to 80% capacity in less than 2 hours. However, it is recommended that the batteries charge for 24 hours after installation or long-term storage.*

NOTE *If you installed power management software and optional EBMs, ensure maximum battery runtime by using the Virtual Front Panel UPS utility on the Software Suite CD.*

Remote Emergency Power-off Installation

The Powerware 9125 includes a REPO connector that allows power to be switched off at the UPS output from a customer-supplied switch in a remote location.

The REPO feature shuts down the protected equipment immediately and does not follow the orderly shutdown procedure initiated by any power management software.

Any devices that are operating on battery power are also shut down immediately. When the REPO switch is reset, the equipment will not return to battery power until the UPS is manually restarted.

If the Off ⏻ button is pressed after the REPO is activated, the UPS remains in Standby mode when restarted until the On | button is pressed.

WARNING

The REPO circuit is an IEC 60950 safety extra low voltage (SELV) circuit. This circuit must be separated from any hazardous voltage circuits by reinforced insulation.

CAUTION

To ensure the UPS stops supplying power to the load during any mode of operation, the input power must be disconnected from the UPS when the emergency power-off function is activated.

NOTE *The REPO function activates when the REPO contacts close.*

To install the REPO switch:

1. Verify that the UPS is off and unplugged or removed from utility power.
2. Connect the switch or circuit to the REPO connector on the UPS rear panel using insulated 0.75 mm^2–0.5 mm^2 (18–20 AWG) wire. See Figure 9.

NOTE *A separate contact must simultaneously cause UPS input AC power to be removed.*

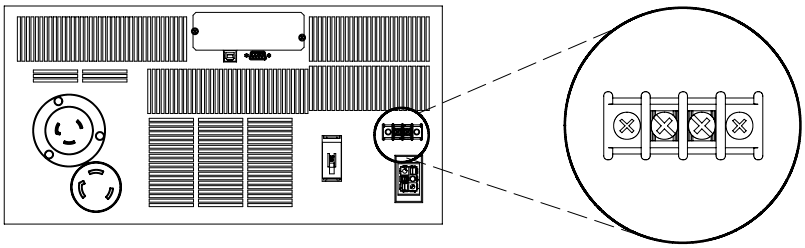


Figure 9. REPO Connector

3. Verify that the externally-connected REPO switch is not activated to enable power to the UPS output receptacle.

4. For plug-receptacle PDMs, return to Step 10 on page 21.

   For hardwired PDMs, return to Step 16 on page 31.

Hardwired PDM Installation

WARNING

Only qualified service personnel (such as a licensed electrician) shall perform the electrical installation. Risk of electrical shock.

CAUTION

- For PDM models with hardwired outputs, overcurrent protection for the output AC circuit(s) is to be provided by others.
- For PDM models with hardwired outputs, suitably rated disconnect switches for the output AC circuit(s) are to be provided by others.

NOTE *Do not make unauthorized changes to the UPS or PDM; otherwise, damage may occur to your equipment and void your warranty.*

The Powerware 9125 hardwired models require a dedicated branch circuit that meets the following requirements:

- 40A minimum circuit with short circuit and overcurrent protection
- 200–240 Vac
- Single-phase
- 50/60 Hz
- The breaker must be wall-mounted and be readily accessible to the operator
- Flexible metal conduit (recommended for ease of service and maintenance)

Figure 10 shows the operation of the UPS with the PPDM EURO HW model, and Figure 11 shows the PPDM HW model.

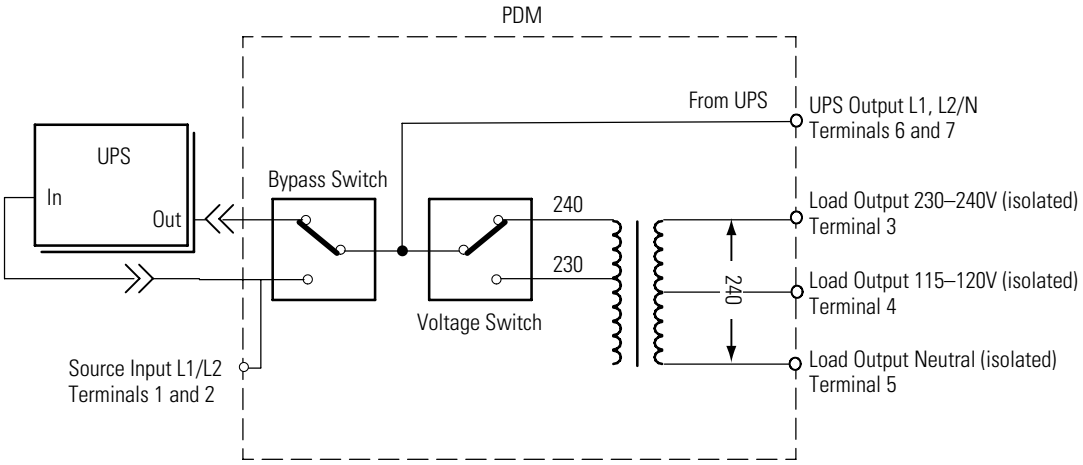


Figure 10. UPS with PPDM EURO HW PDM Block Diagram

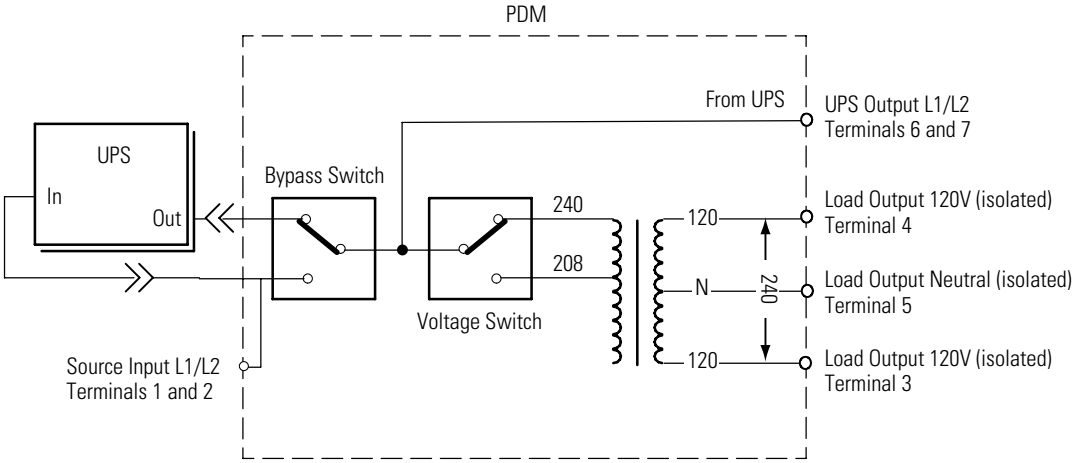


Figure 11. UPS with PPDM HW PDM Block Diagram

To hardwire the PDM:

1. If you are installing power management software, connect your computer to the USB port or UPS communication port. For the communication port, use only the serial cable supplied in the accessory kit.

2. Switch off utility power at the distribution point where the PDM will be connected. Be absolutely sure there is no power.

3. Verify that the PDM output circuit breaker is in the OFF position (see Figure 13 on page 29).

4. Verify that the bypass switch on the PDM is in the NORMAL position (see Figure 12).

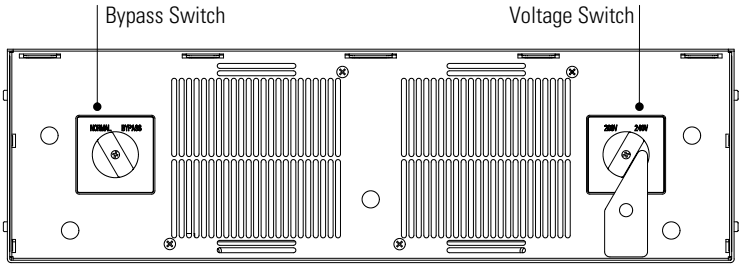


Figure 12. PDM (with Front Cover Removed)

5. **Changing the PDM output voltage.** When the PDM voltage switch is set to the 240V position (the default), the output voltage is 240/120V. When set to the 208V position, the output voltage is 208/120V. See Table 2 for a list of PDM input/output voltage settings. Figure 12 shows the voltage switch.

NOTE *In most applications, the voltage switch does NOT need changing.*

To change the switch position, remove the bracket screw and turn the switch. Flip the bracket around to fit the new position and reinstall.

Table 2. Hardwired PDM Input/Output Voltage Settings

Input Voltage (from UPS)	PPDM HW and PPDM EURO HW Models PDM Output Voltage	
	208V Switch Position (HV/LV)	Default 240V Switch Position (HV/LV)
208	208/120	208/104
220	220/126	220/110
230	230/131	230/115
240	240/136	240/120

6. Remove the wiring access cover and the conduit landing plate and retain (see Figure 13).

Punch holes in the conduit landing plate for the input and output conduit using a Greenlee® punch or similar device.

7. Pull the input and output wires through separate conduit, leaving approximately 0.5m (2 ft) of exposed wire. Attach a flexible metal fitting to the end of each conduit.

8. Insert each conduit through a wiring access entry and attach the conduit fitting to the panel. Strip 9 mm (0.35″) of insulation from the end of each incoming wire.

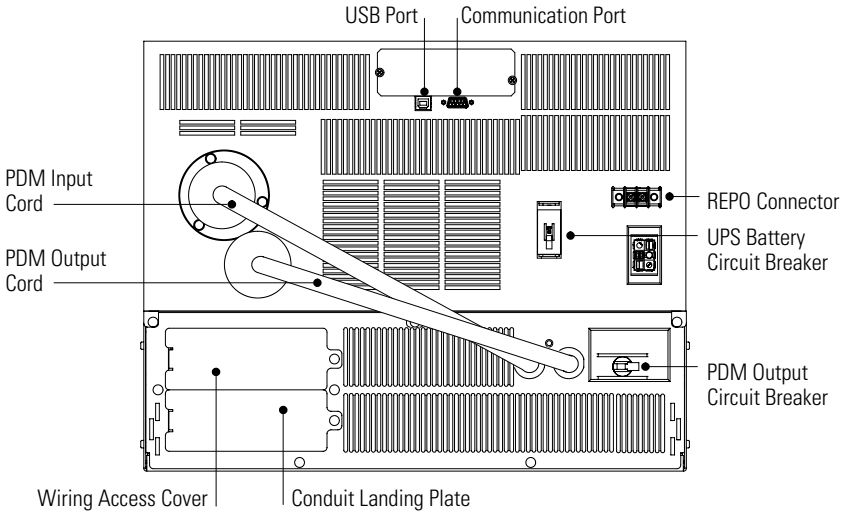


Figure 13. UPS and Hardwired PDM Installation

9. Connect the input and ground wires to the terminal block according to the PDM model:

- For the PPDM EURO HW model, see Figure 14 and Table 3.
- For the PPDM HW model, see Figure 15 and Table 3.

10. Connect the output and ground wires to the terminal block according to the PDM model:

- For the PPDM EURO HW model, see Figure 14 and Table 3.
- For the PPDM HW model, see Figure 15 and Table 3.

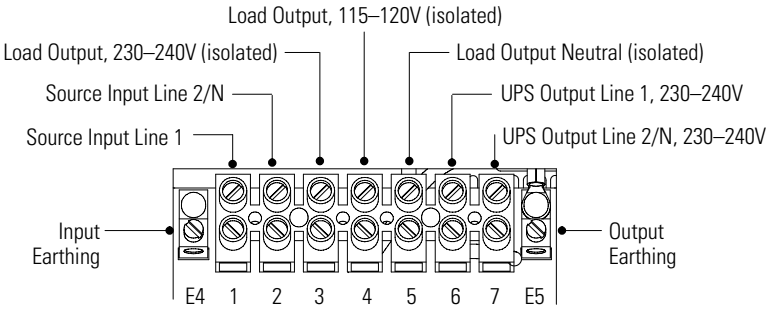

Load Output, 115–120V (isolated)
Load Output, 230–240V (isolated)
Load Output Neutral (isolated)
Source Input Line 2/N
UPS Output Line 1, 230–240V
Source Input Line 1
UPS Output Line 2/N, 230–240V
Input Earthing
Output Earthing
E4 1 2 3 4 5 6 7 E5

Figure 14. PPDM EURO HW Model Terminal Block

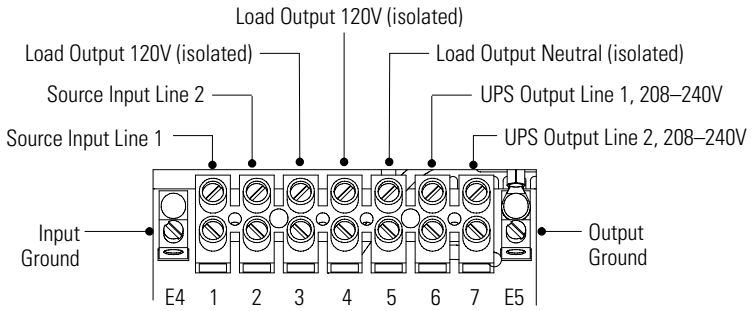

Load Output 120V (isolated)
Load Output 120V (isolated)
Load Output Neutral (isolated)
Source Input Line 2
UPS Output Line 1, 208–240V
Source Input Line 1
UPS Output Line 2, 208–240V
Input Ground
Output Ground
E4 1 2 3 4 5 6 7 E5

Figure 15. PPDM HW Model Terminal Block

Table 3. PDM Wiring Specifications

Terminal Position	PDM Wire Function		Terminal Wire Size Rating*	Tightening Torque
	PPDM EURO HW	PPDM HW		
1	Source Input Line 1	Source Input Line 1	2–17 mm² (14–6 AWG)	1.8 ±0.22 Nm (16 ±2 lb in)
2	Source Input Line 2/N	Source Input Line 2		
3	Load Output 230–240V (isolated)	Load Output 120V (isolated)		
4	Load Output 115–120V (isolated)	Load Output 120V (isolated)		
5	Load Output Neutral (isolated)	Load Output Neutral (isolated)		
6	UPS Output Line 1, 230–240V	UPS Output Line 1, 208–240V		
7	UPS Output Line 2N, 230–240V	UPS Output Line 2, 208–240V		
E4	Input Earthing	Input Ground	2–5 mm² (14–10 AWG)	2.26 ±0.22 Nm (20 ±2 lb in)
E5	Output Earthing	Output Ground	8 mm² (8 AWG)	2.82 ±0.22 Nm (25 ±2 lb in)
			17 mm² (6 AWG)	3.95 ±0.22 Nm (35 ±2 lb in)

* Use 2.0 mm² (14 AWG) 75°C copper wire minimum.

11. Replace the wiring access cover and the conduit landing plate.

12. Plug the input and output cords of the PDM into the input and output power connectors on the UPS rear panel (see Figure 13).

13. Remove the breaker tie from all battery circuit breakers.

14. Switch all battery circuit breakers to the ON (|) position.

15. If an emergency power-off (disconnect) switch is required by local codes, see "Remote Emergency Power-off Installation" on page 23 to install the REPO switch before powering on the UPS.

16. Switch the main utility breaker on.

The ~ indicator flashes, indicating the UPS is in Standby mode with the equipment offline.

17. Press the On | button on the UPS front panel.

The ~ indicator illuminates solid and the bar graph indicators display the percentage of load being applied to the UPS.

18. Confirm the UPS output voltage through the front panel and verify that it matches the PDM output voltage (see page 35).

CAUTION

Failure to match the UPS output voltage may result in a hazardous condition, including damage to the UPS or to the load.

19. Switch the PDM output circuit breaker to the ON (|) position.

NOTE *The PDM output circuit breaker (disconnect switch) disconnects power to the output on the PDM rear panel, but does NOT shut off power to the UPS (opening the upstream protection would be required).*

20. Install the PDM front cover (shipped separately).

21. If you installed a REPO switch, test the REPO function:

Activate the external REPO switch.

De-activate the external REPO switch and restart the UPS.

NOTE *The batteries charge to 80% capacity in less than 2 hours. However, it is recommended that the batteries charge for 24 hours after installation or long-term storage.*

NOTE *If you installed power management software and optional EBMs, ensure maximum battery runtime by using the Virtual Front Panel UPS utility on the Software Suite CD.*

PDM Rear Panels

This section shows the rear panels of the plug-receptacle PDM models.

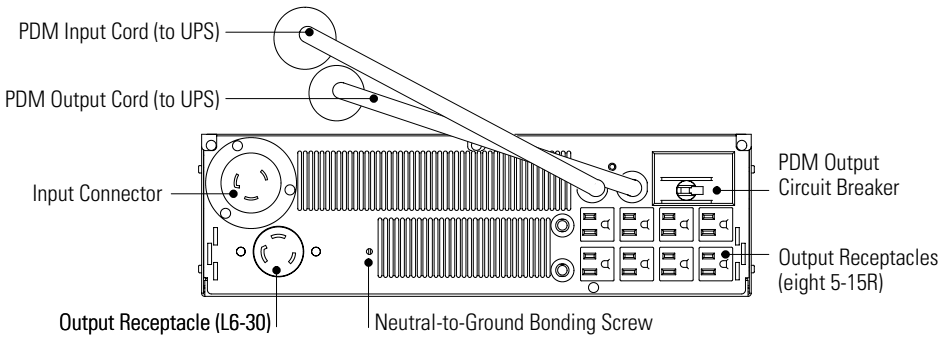


Figure 16. PPDM L6-30

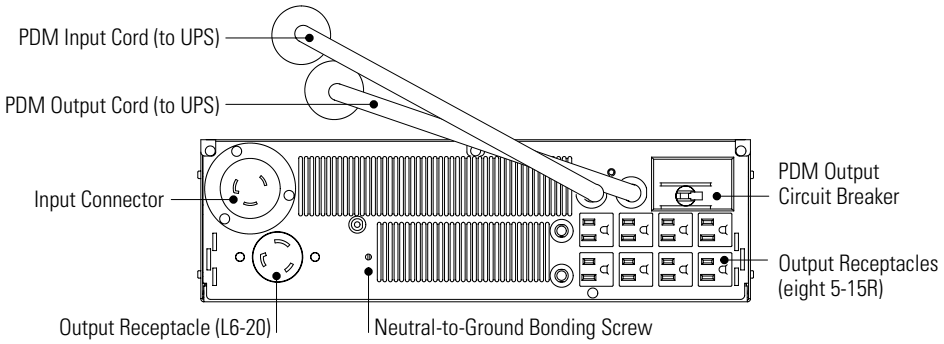


Figure 17. PPDM L6-20

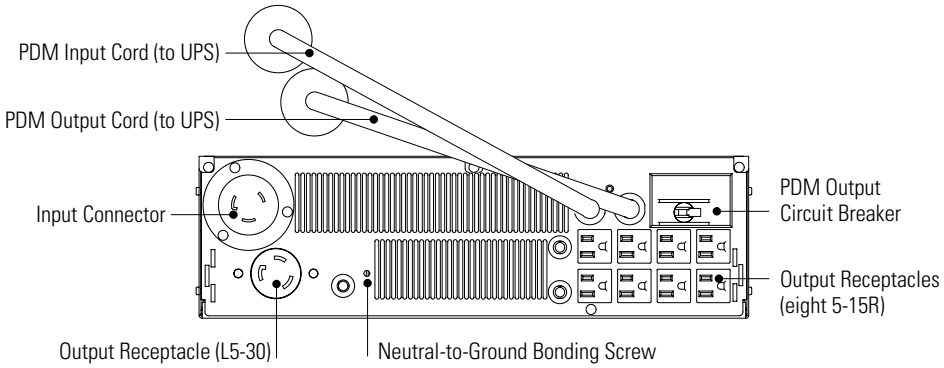


Figure 18. PPDM L5-30

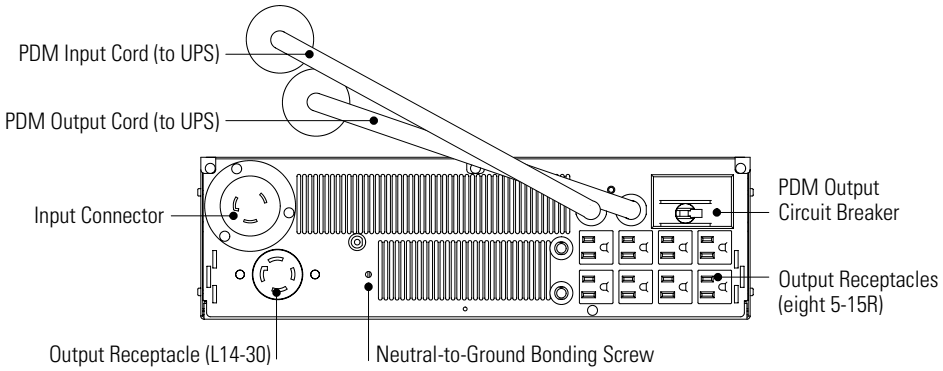


Figure 19. PPDM L14-30

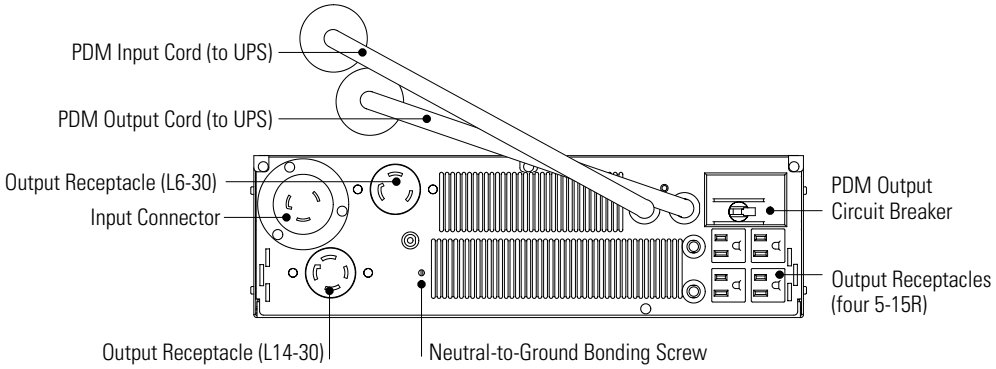


Figure 20. PPDM L6-30&L14-30

Chapter 3 Configuration

When the UPS is in Configuration mode, the bar graph indicators represent the configuration options. Use the control buttons (On | button and 🔊 button) to modify the UPS configuration. Figure 21 shows the LEDs and Table 4 explains the corresponding options.

NOTE *The UPS can be configured while in Battery mode.*

CAUTION

DO NOT press the Off ⏻ button while the UPS is in Configuration mode; pressing the Off ⏻ button removes all power to your equipment immediately and the UPS enters Standby mode.

To reconfigure the UPS default settings:

1. Press and hold the On | button and the 🔊 button simultaneously for three seconds. The UPS switches to Configuration mode.

   The bar graph indicators flash briefly and then display the enabled options.

2. Press and hold the On | button until you hear the second beep to scroll through the options. The LED for the selected option indicates the current setting; flashing represents disabled options (see Figure 21 and Table 4).

   Scrolling past the last LED returns to the first configuration option.

   If you press the On | button and nothing happens, the UPS is still in Operation mode. Repeat Step 1 to enter Configuration mode, and then perform Step 2.

3. Press the 🔊 button ONCE to select the Voltage option or to toggle the Site Wiring Fault Alarm on or off.

NOTE *The UPS exits Configuration mode automatically after two minutes of inactivity.*

4. Press and hold the On | button and the 🔊 button simultaneously for three seconds to exit Configuration mode at any time.

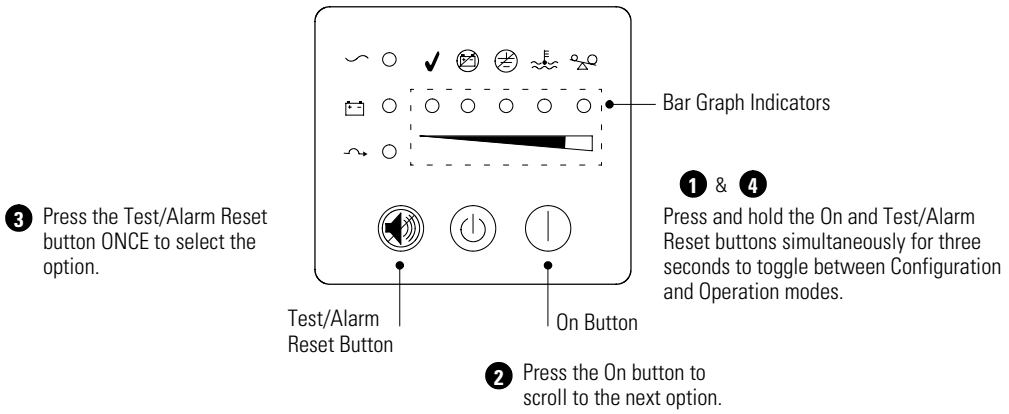
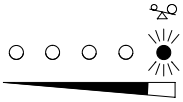
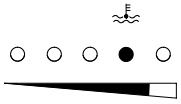
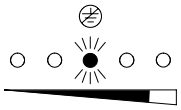
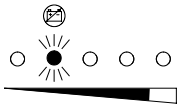
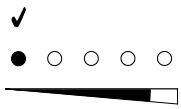

Bar Graph Indicators
1 & 4
Press and hold the On and Test/Alarm Reset buttons simultaneously for three seconds to toggle between Configuration and Operation modes.
3 Press the Test/Alarm Reset button ONCE to select the option.
Test/Alarm Reset Button
On Button
2 Press the On button to scroll to the next option.

Figure 21. Using Configuration Mode

Table 4. Configuration Mode LEDs and Options

Bar Graph Indicators	Option	LED Status	Explanation
	240V Nominal Output Voltage	On	Nominal output voltage is 240V. All other nominal output voltages are disabled.
		Flashing	240V is disabled; one of the other output voltage options is selected.
	230V Nominal Output Voltage	On	Nominal output voltage is 230V. All other nominal output voltages are disabled.
		Flashing	230V is disabled; one of the other output voltage options is selected.
	220V Nominal Output Voltage	On	Nominal output voltage is 220V. All other nominal output voltages are disabled.
		Flashing	220V is disabled; one of the other output voltage options is selected.
	208V Nominal Output Voltage	On	Nominal output voltage is 208V. All other nominal output voltages are disabled.
		Flashing	208V is disabled; one of the other output voltage options is selected.
	Site Wiring Fault Alarm	On	Alarm sounds when the polarity of the outlet is reversed or the ground connection is missing; have a qualified electrician repair the outlet wiring.
		Flashing (default)	Alarm DOES NOT sound when the polarity of the outlet is reversed or the ground connection is missing.

Chapter 4 Operation

The PowerPass Distribution Module allows for the removal of the UPS while providing power to your protected equipment. This Maintenance Bypass feature is useful when replacing the UPS for maintenance or upgrades.

Using Maintenance Bypass

To transfer your equipment to Maintenance Bypass (AC Line operation) and remove the UPS:

1. Remove the PDM front cover.
2. Turn the bypass switch on the PDM to the BYPASS position. The PDM is now powering your equipment from utility power.
3. Press and hold the Off ⏻ button on the UPS front panel for approximately three seconds. The UPS switches to Standby mode.
4. If optional Extended Battery Modules (EBMs) are installed, switch the battery circuit breaker on the first EBM rear panel to the OFF (O) position.

   Unplug the EBM cable from the UPS.
5. Disconnect the PDM input and output cords from the UPS. See Figure 8 on page 21.

   The UPS shuts down in five seconds. The bar graph and battery indicators flash briefly prior to shutdown.
6. Remove the UPS.

To reinstall the UPS and transfer your equipment from Maintenance Bypass (AC Line operation) to the UPS:

1. If optional EBM(s) are installed, reconnect the EBM cable to the battery connector on the UPS rear panel.

   Switch the battery circuit breaker on the first EBM rear panel to the ON (|) position.

2. Plug the input and output cords of the PDM into the input and output power connectors on the UPS rear panel (see Figure 8 on page 21).

   The ~ indicator flashes, indicating the UPS is in Standby mode with the equipment offline.

3. Press the On | button on the UPS front panel.

   The ~ indicator illuminates solid.

4. If the PDM voltage switch is set to 208V, confirm the UPS output voltage through the front panel (see page 35).

5. Turn the bypass switch on the PDM to the NORMAL position.

   The bar graph indicators display the percentage of load being applied to the UPS. The UPS is now in Normal mode and supplying power to your equipment.

6. Reinstall the PDM front cover.

Chapter 5 Specifications

Table 5. Model Specifications

Model	Input Voltage	Input Current	Output Voltage[1]	Output Current	Output Receptacles
PPDM L6-30	208–240V	24A	115/120/208/240V	30A	(1) L6-30R, (8) 5-15R
PPDM L6-20	208–240V	24A	115/120/208/240V	30A	(1) L6-20R, (8) 5-15R
PPDM L5-30	208–240V	24A	115/120V	41A/208V 45A/240V	(1) L5-30R, (8) 5-15R
PPDM L14-30	208–240V	24A	115/120/208/240V		(1) L14-30R, (8) 5-15R
PPDM L6-30&L14-30	208–240V	24A	115/120	41A/208V 45A/240V	(1) L6-30R, (1) L14-30R, (4) 5-15R
			208/240V	30A	
PPDM EURO HW	230/240V	30A	115/120/230/240V	30A	Hardwired
PPDM HW	208–240V	30A	115/120/208/240V	41A/208V 45A/240V	Hardwired

[1] Low voltage output voltage varies ±5% based on the attached load.

Table 6. Technical

Frequency	60 Hz PPDM EURO HW: 50/60 Hz
Isolation Transformer	208V/120V or 240V/120V
Bypass Switch	30A
Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-22°C to 55°C (-7°F to 131°F)
Relative Humidity	5–95% noncondensing
Safety Conformance	UL 1778; CSA C22.2, No. 107.1, 107.2; NOM-019-SCFI EN 50091-1-1, IEC 60950
Agency Markings	cULus, cUL, NOM-NYCE (all models except PPDM EURO HW), CE UL/DEMKO GS (PPDM EURO HW only)
EMC (Class A)	EN 50091-2, FCC Part 15, ICES-003
Dimensions (WxDxH)	44.2 x 68.3 x 13 cm 17.4″ x 26.9″ x 5.1″ (3U)
Weight	46.7 kg (103 lb)

Chapter 6 PDM Schematics

This section shows the schematics of each PDM model.

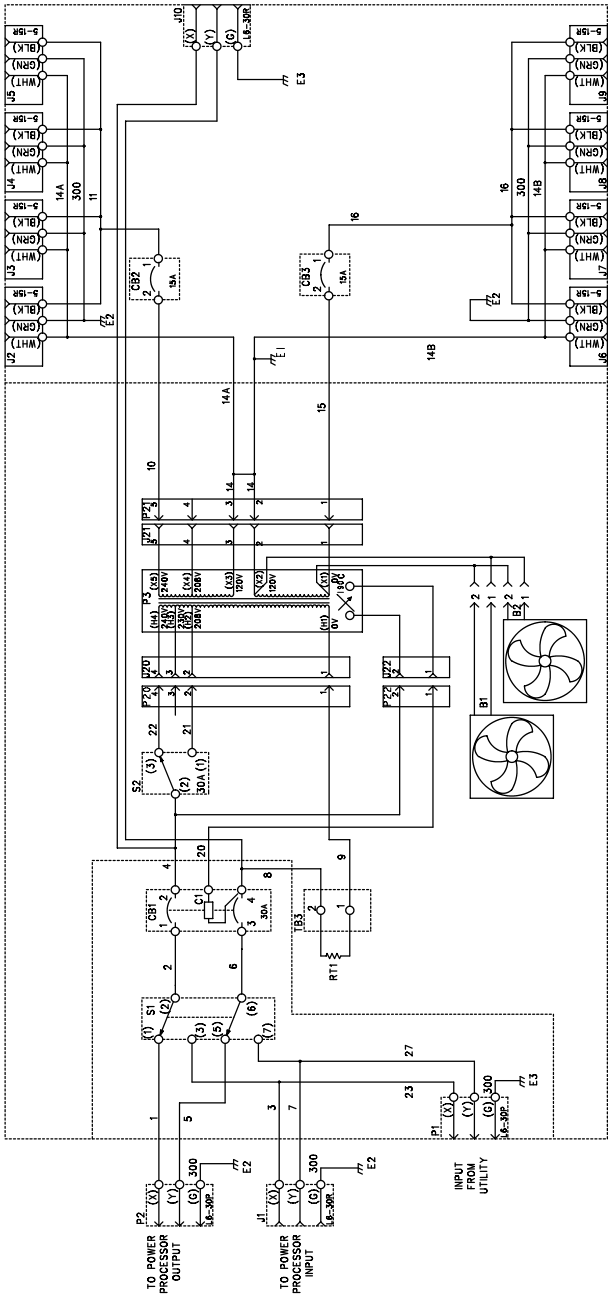


Figure 22. PPDM L6-30 Schematic

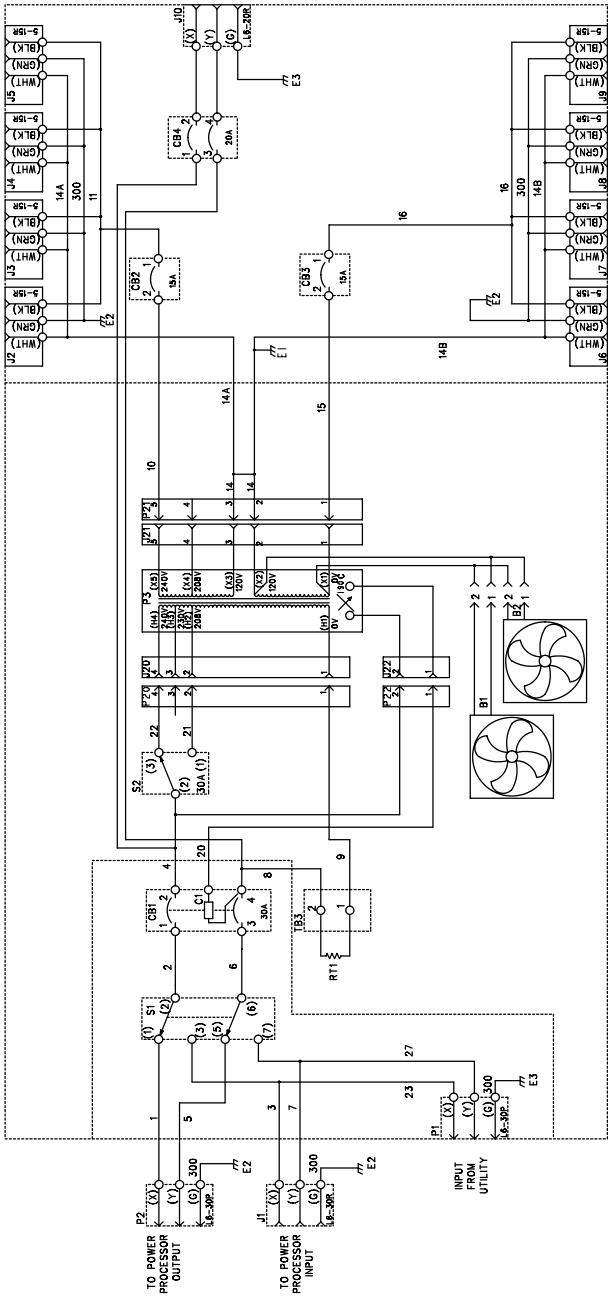


Figure 23. PPDM L6-20 Schematic

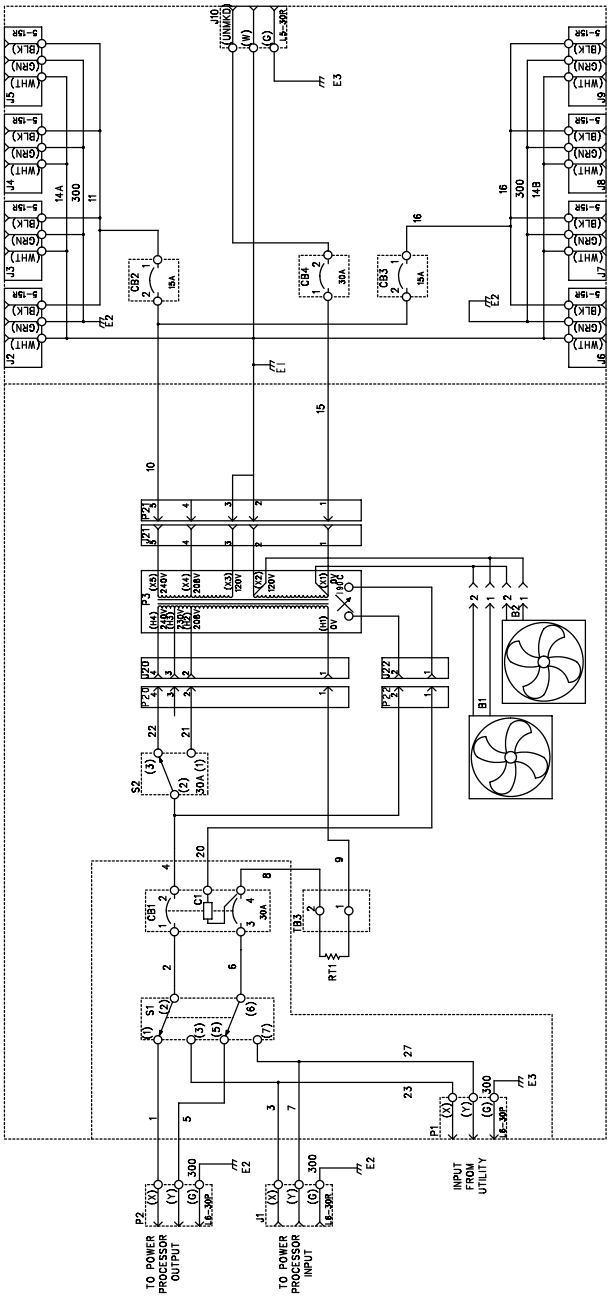


Figure 24. PPDM L5-30 Schematic

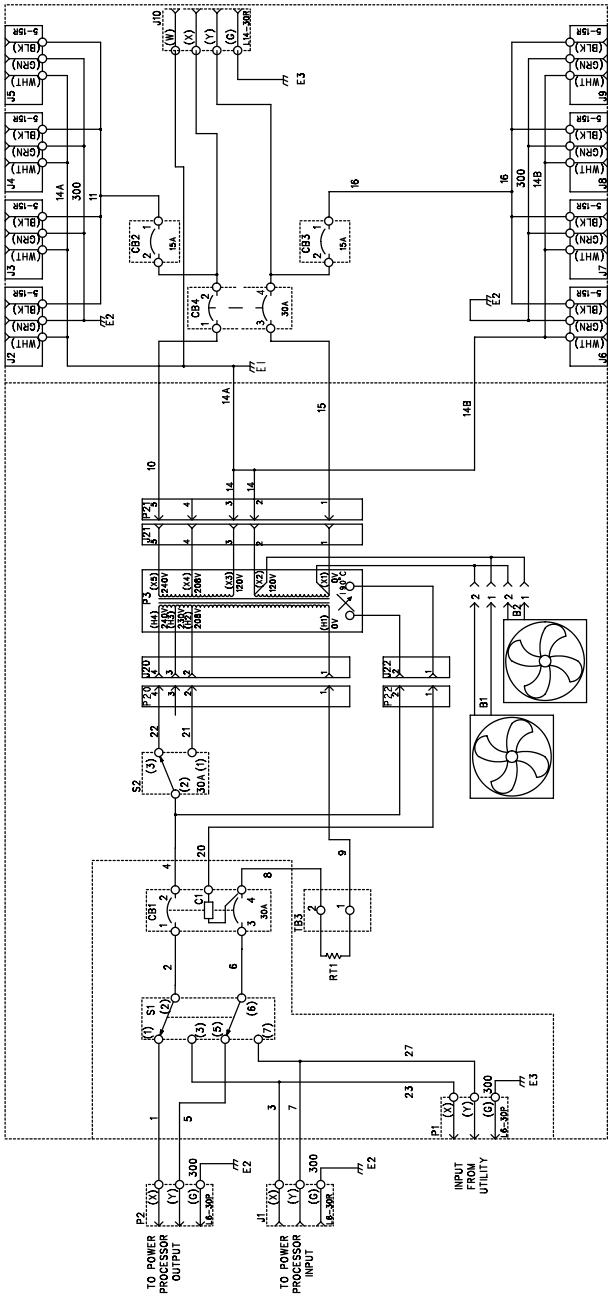


Figure 25. PPDM L14-30 Schematic

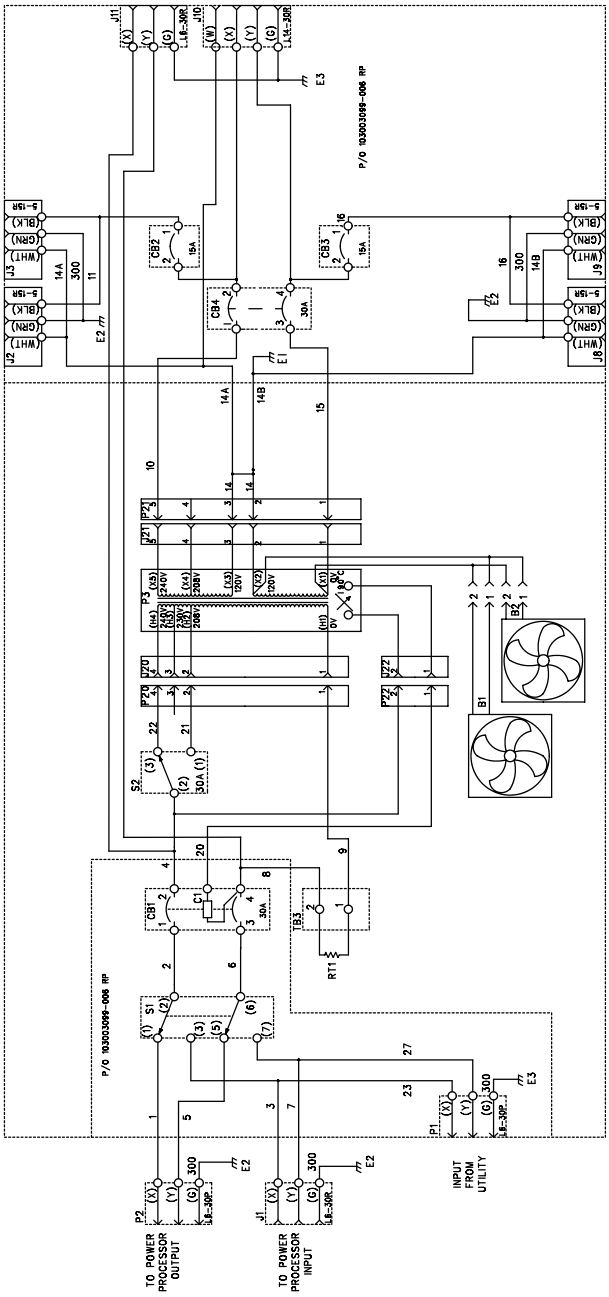


Figure 26. PPDM L6-30&L14-30 Schematic

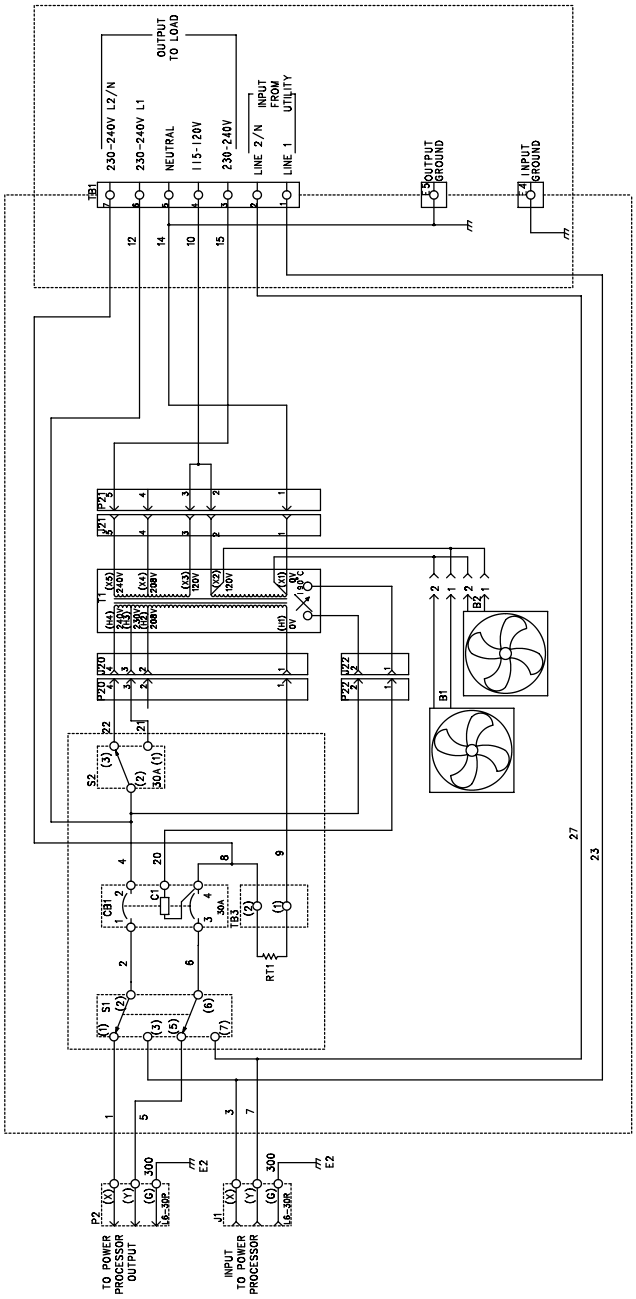


Figure 27. PPDM EURO HW Schematic

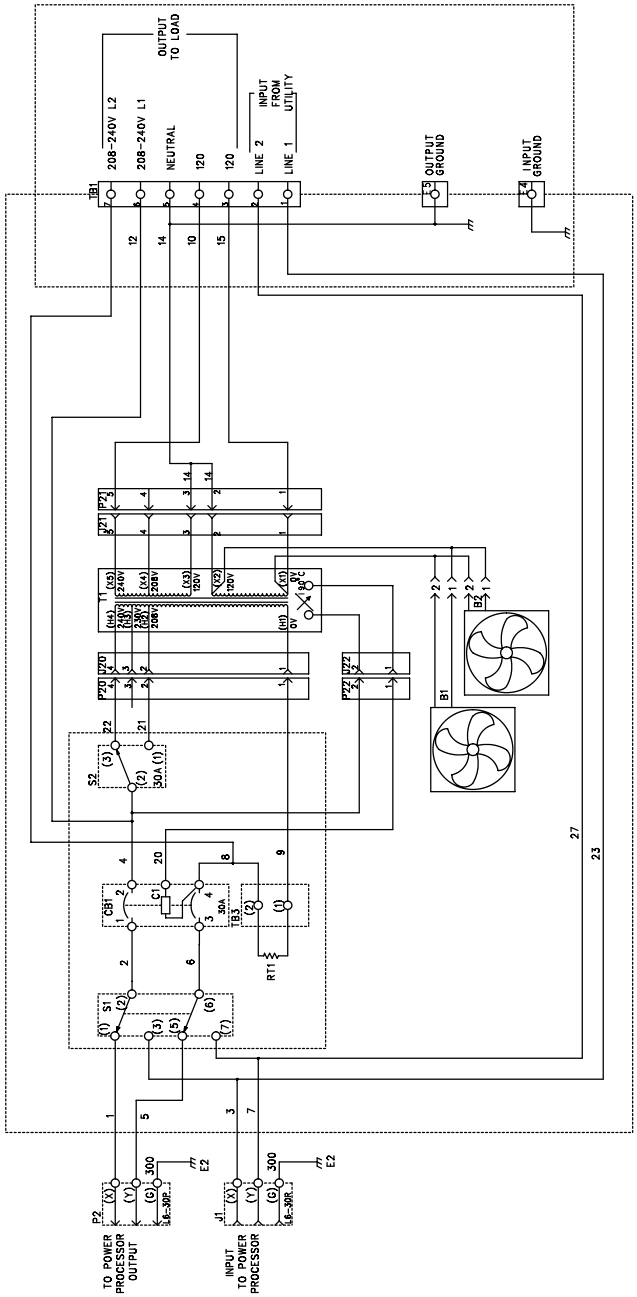


Figure 28. PPDM HW Schematic

Chapter 7 Service and Support

If you have any questions or problems with the UPS, call your **Local Distributor** or the **Help Desk** at one of the following telephone numbers and ask for a UPS technical representative.

United States:	**1-800-356-5737** or **1-919-870-3149**
Canada:	**1-800-461-9166 ext 260**
All other countries:	**Call your local service representative**

Please have the following information ready when you call the Help Desk:

- Model number
- Serial number (located behind the UPS front cover)
- Version number (if available)
- Date of failure or problem
- Symptoms of failure or problem
- Customer return address and contact information

If repair is required, you will be given a Returned Material Authorization (RMA) Number. This number must appear on the outside of the package and on the Bill Of Lading (if applicable). Use the original packaging or request packaging from the Help Desk or distributor. Units damaged in shipment as a result of improper packaging are not covered under warranty. A replacement or repair unit will be shipped, freight prepaid for all warrantied units.

NOTE *For critical applications, immediate replacement may be available. Call the* ***Help Desk*** *for the dealer or distributor nearest you.*